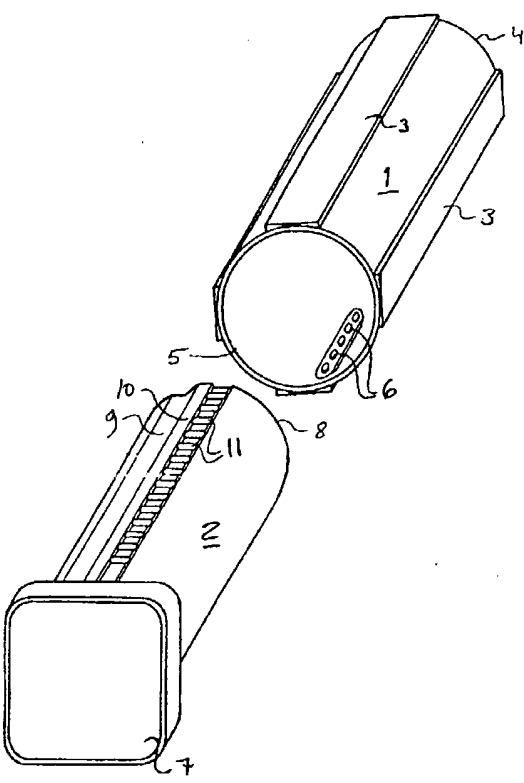




## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/SE93/00334</p> <p>(22) International Filing Date: 16 April 1993 (16.04.93)</p> <p>(71) Applicant (for all designated States except US): AB CERBOHERTILA [SE/SE]; Norra Industrigatan 6, S-265 00 Ästrop (SE).</p> <p>(72) Inventor; and (75) Inventor/Applicant (for US only): TÖRNQVIST, Lennart [SE/SE]; P1 6852, S-264 00 Klippan (SE).</p> <p>(74) Agents: WESTERLUND, Christer et al.; L A Groth &amp; Co KB, Box 6107, S-102 32 Stockholm (SE).</p>		<p>(81) Designated States: AU, BR, CA, JP, NO, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).</p> <p><b>Published</b> With international search report. In English translation (filed in Swedish).</p>
<p>(54) Title: A TELESCOPIC PACKAGE</p> <p>(57) Abstract</p> <p>A telescopic packaging unit includes an outer sleeve (1) which is open at one end, and an inner sleeve (2) which is open at one end and inserted in the outer sleeve. The sleeves have a generally circular cross section and can be turned about their longitudinal axes and moved axially in relation one another, wherein the outer sleeve is provided at its open end with at least one projection (6) which extends radially inwards, and the inner sleeve is provided with an axially extending channel (9) in which the projection can move without hindrance, and also with an axially extending row of outwardly directed projection (11) between which the first mentioned projection can be inserted so as to lock the sleeves together against relative movement in an axial direction. Located between the channel and the row of projections is an axially extending ridge (10) over which the first mentioned is forced to pass under elastic deformation in order to be able to move from the channel to the row of projections, or vice versa.</p> 		

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A Telescopic PackageDESCRIPTIONTechnical Field5

The present invention relates to a telescopic packaging device comprising an outer sleeve which is open at one end, and an inner sleeve which is open at one end and which is inserted in the outer sleeve, wherein the sleeves have a generally  
10 circular cross-section and can be turned about their longitudinal axes and moved axially in relation to one another, wherein the outer sleeve is provided at its open end with at least one projection that extends radially inwards and the inner sleeve is provided with an axially extending channel in  
15 which the projection can move without hindrance, and also with an axially extending row of outwardly extending projections between which the first mentioned projection can be inserted so as to lock the sleeves against axial movement in relation to one another.

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A telescopic packaging device of this kind is intended for packaging elongated objects of different sizes, such as drills, such that the length of the package will correspond to the length of the packaged object.

25BACKGROUND ART

Telescopic packaging devices of the aforedefined kind are known in many different forms. A packaging device of the kind  
30 describe above is known from German published specification 2418846. The main drawback with this known packaging device is that it must be produced with great precision in order to ensure that the two sleeves cannot be rotated from their locked state accidentally, and that the inwardly extending  
35 projections on the outer sleeve are liable to catch in the locking apertures on the inner sleeve as the sleeves are moved axially in relation to one another.

## DISCLOSURE OF THE INVENTION

One object of the present invention is to eliminate the drawbacks of earlier known packaging devices and to provide a  
5 telescopic packaging device which can be produced easily and which will enable the sleeves to be moved axially and freely with the minimum of resistance, and with which the sleeves can be locked together without risk of the sleeves being moved from their locked positions accidentally.

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This object is achieved with an inventive telescopic packaging device having the characteristic features set forth in the characterizing clauses of the following claims.

## 15 BRIEF DESCRIPTION OF THE DRAWING

The single figure of the accompanying drawing is a perspective view of a preferred exemplifying embodiment of an inventive telescopic packaging device.

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## DESCRIPTION OF A PREFERRED EMBODIMENT

The telescopic packaging device illustrated in the drawing is made of an injection molded plastic which has a given degree  
25 of elasticity or resilience. The packaging device includes a generally circular-cylindrical outer sleeve 1 and a generally circular-cylindrical inner sleeve 2. The outer sleeve 1 has a number of planar surfaces 3 which extend between the closed bottom 4 of the sleeve and its open end 5.  
30 The outer sleeve 1 is also provided with five circular-cylindrical projections 6 which extend radially inwards and which are formed integrally with the sleeve 1. Five projections (not shown) identical to the projections 6 are disposed diametrically opposite these latter projections.

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The inner sleeve 2 is provided with an enlarged, square bottom plate 7 which has an anti-roll function, and an open end 8.

- The outer surface of the sleeve 2 includes a channel 9 which extends between the plate 7 and the end 8. The channel 9 is delimited on one side by a ridge 10 whose length is equal to the length of the channel 9 and which has the same radial extension as or a slightly larger radial extension than the sleeve wall. Provided on that side of the ridge 10 which is distal to the channel 9 is a row of projections 11 which extend from the end 8 and terminate just short of the plate 7. The projections 11 have the form of small bars whose upper surfaces are located at essentially the same radial distance from the center axis of the sleeve 2 as the upper surface of the ridge 10, and whose bottom surfaces are located at essentially the same radial distance from the center axis of the sleeve 2 as the bottom of the channel 9. The distance between two mutually adjacent bars 11 is slightly greater than the diameter of a projection 6, although this distance is not a critical parameter and has no affect on the locking function between the sleeves.
- Although not shown, the wall of the sleeve 2 has provided thereon a corresponding channel, a corresponding ridge and a corresponding row of projections which are located diametrically opposite the channel 9, the ridge 10 and the row of projections 11.
- Means (not shown) which function to center a packaged object in the sleeves are provided on the inner surfaces of the bottoms of the two sleeves 1 and 2.
- Subsequent to inserting into the sleeve 2 an elongated object which is longer than the sleeve 2, such as a machine drill, the sleeve 1 is placed on the sleeve 2 such that the projections 6, which have earlier been turned about their longitudinal axes so as to be located immediately above the channel 9, will enter the channel, which therewith guides the projections 6 without resistance or hinderance. When the means on the bottom 4 of the sleeve 1 come into contact with

the object, the object is centered in the sleeves during continued telescoping thereof. When it is no longer possible to telescope the sleeves, the sleeve 1 is turned about their longitudinal axes in relation to the sleeve 2 so that the  
5 projections 6 will pass over the ridge 10, while deforming elastically the wall of one or both sleeves, whereafter the projections 6 move radially inwards between two projections 11 and the sleeve wall or walls return elastically to their original state. Because that part of the wall on the sleeve  
10 2 which borders the projections 11 on the side thereof which lies distal to the ridge 10 has essentially the same height as or is higher than the projections 11, the sleeve 3 cannot be rotated further in the described direction.

15 Similar to what has been described above, the projections (not shown) carried by the sleeve 1 and located diametrically opposite the projections 6 are inserted between the projections (not shown) on the sleeve 2 that are diametrically opposite the projections 11, at the same time as the projections  
20 6 are inserted between the projections 11.

When wishing to open the packaging device the same procedure is followed as that described above, although in the reverse order.

25 Although the invention has been described and illustrated solely with reference to one exemplifying embodiment of the invention it will be understood that the invention is not restricted to this embodiment and that the invention is re-  
30 stricted solely by the contents of the following claims.

Claims

1. A telescopic packaging device which comprises an outer sleeve (1) which is open at one end and an inner sleeve (2) which is open at one end, and inserted in the outer sleeve, wherein the sleeves have a generally circular cross-sectional shape and can be turned about their longitudinal axes and moved axially in relation to one another, wherein the outer sleeve is provided at its open end with at least one projection (6) which extends radially inwards and the inner sleeve is provided with an axially extending channel (9) in which the at least one projection can move freely, and also with an axially extending row of outwardly directed projections (11) between which the aforesaid projection (6) can be inserted so as to lock the sleeves firmly against axial movement in relation to one another, characterized by an elongated ridge (10) which extends axially between the channel (9) and the row of projections (11) and over which the aforesaid projection (6) is forced to pass under elastic deformation in order to be moved from the channel to the row of projections, or vice versa, and the largest radial extension of which corresponds generally to the largest radial extension of the row of projections.
2. A device according to claim 1, characterized in that the projections in said row of projections are comprised of bars (11) which extend in the direction of rotation of the sleeves (1,2) about their longitudinal axes and which have a constant cross-section in this direction.
3. A device according the claim 1 or 2, characterized in that the inner sleeve (2) is provided with a channel, a second row of projections and a second ridge which are located generally diametrically opposite the first mentioned channel (9), the first mentioned row of projections (11) and the first mentioned ridge (10) respectively; and in that the outer sleeve (1) is provided with a second projection located

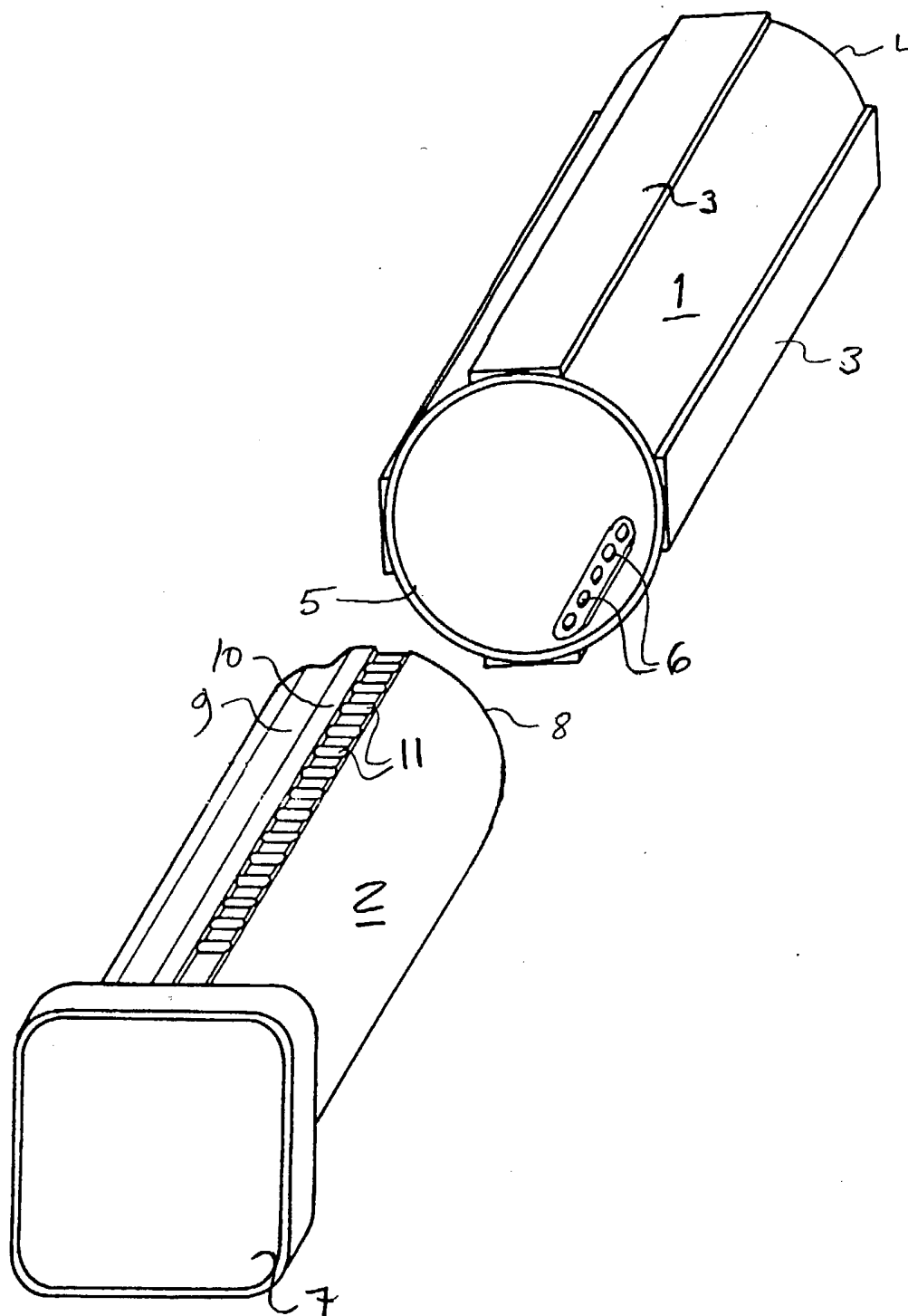
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generally diametrically opposite the first mentioned projection (6).

- 5 4. A device according to claim 1, 2 or 3, characterized in that the smallest radial extension of the row of projections (11) corresponds essentially with the smallest radial extension of the channel (9).



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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 93/00334

## A. CLASSIFICATION OF SUBJECT MATTER

IPC5: B65D 21/08, B65D 85/20

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC5: B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E,X	SE, A, 9103041-1 (AB CERBO-HERTILA), 19 April 1993 (19.04.93) --	1-4
X	GB, A, 1488074 (HILTI AKTIENGESSELLSCHAFT), 5 October 1977 (05.10.77), page 3, line 78 - line 91; page 3, line 52 - line 58, figures 6,5, claim 3	1,2,4
Y	--	3
Y	US, A, 2202084 (E.BOURLAND), 28 May 1940 (28.05.40) -----	3

☐ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

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30 November 1993	01-12-1993
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# INTERNATIONAL SEARCH REPORT

Information on patent family members

16/10/93

International application No.

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
SE-A- 9103041-1	19/04/93	NONE	
GB-A- 1488074	05/10/77	AT-B- 338689	12/09/77
		AU-B- 505878	06/12/79
		BE-A- 827483	31/07/75
		CA-A- 1044660	19/12/78
		CH-A- 586144	31/03/77
		DE-A, C- 2418846	04/03/76
		FR-A, B- 2267956	14/11/75
		JP-C- 1153132	30/06/83
		JP-A- 50144200	19/11/75
		JP-B- 57048469	16/10/82
		NL-A- 7502863	21/10/75
		SE-B, C- 404166	25/09/78
		SE-A- 7504262	20/10/75
		US-A- 4046279	06/09/77
US-A- 2202084	28/05/40	NONE	